BOEM ENVIRONMENTAL STUDIES PROGRAM: Ongoing Study

Region: Pacific

Planning Area(s): Washington-Oregon

Title: Industry Feasibility Mapping for the Outer Continental Shelf off the State of Oregon

BOEM Information Need(s) to be Addressed: To support the development of renewable energy offshore Oregon, BOEM has identified a need to develop a series of mapping products to inform the development of renewable energy on the Outer Continental Shelf (OCS). Existing information on renewable energy device types, interviews with device and potential project developers, and experiences from international development will inform existing device suitability parameters that will be used to develop and map spatially explicit suitability areas for managing future renewable energy resources on the OCS. As BOEM moves forward with new responsibilities for offshore renewable energy on the Pacific OCS this information will be used to identify and document criteria for suitable sites for both wind and wave energy development and feasibility areas based on defined parameters.

Total BOEM Cost: $100,000 **Period of Performance:** FY 2013-2014

Conducting Organization: U.S. Department of Energy, Pacific Northwest National Laboratory (PNNL)

Principal Investigator: Brie Van Cleve

BOEM Contact: Jean Thurston

Description:

Background: Existing information on renewable energy device types, interviews with device and potential project developers, and experiences from international development is required to inform existing device suitability parameters that will be used to develop and map spatially explicit suitability areas. Information on areas offshore that are feasibility for wind and wave energy does not currently exist for offshore the State of Oregon in OCS waters; a study on wave energy suitability following similar criteria to be used in this study was completed in state waters offshore Oregon in 2012. Study products will include a final report and geo-referenced spatial data in NAD83 in raster grid format compatible with ARCGIS 10.0.

Objectives: The purpose of the study is to develop a series of mapping products to inform the development of renewable energy on the OCS off the coast of Oregon. The study will answer the question of where is it technically feasible to site renewable energy devices, specifically wind and wave devices, on the OCS offshore Oregon. There are five objectives to this study, as listed below:

- Identify and document areas preferred by industry for potential wind and wave renewable energy development and how they relate to the previous areas identified for the State of Oregon in state waters.
- Produce maps of the OCS with areas of potential development suitability based on a technical feasibility analysis.
- Rank areas of potential development from low to high in order to provide input on the BOEM planning process and base the outcomes on scenarios, varying either technology types, economic feasibility, or intensity of development.
- Develop a series of specifications based on each technology type's design. For example, a given device type may need a set water depth range, a sediment depth or type, a specific seafloor gradient, and/or a specific distance to electrical grid connection.
- Acquire renewable energy device specifications, to the extent necessary, by consulting with individual developers or by using larger facilitated workshops to bring developers together.

Methods: Existing information on renewable energy device types, interviews with device and potential project developers, and experiences from international development will be used to develop and map spatially explicit suitability areas on maps using BOEM OCS leasing blocks and aliquots (1/16 of an OCS block). Parameters will be used to model coastal, mid-depth, and offshore renewable energy device suitability and a set of scores will be developed based on existing information, interviews, and experiences. A histogram will be created for each technology to illustrate frequency of suitability for each aliquot in the study area and the general shape and spread of the suitability model results. This will provide BOEM maps of where it is technically feasible to site renewable energy devices on the OCS offshore Oregon.

Current Status: This study was awarded as an Interagency Agreement with the Department of Energy's Pacific Northwest National Laboratory on September 4, 2013; the first phase is scheduled to be completed on December 4, 2013.

Final Report Due: September 30, 2014

Publications Completed: None at this time.

Affiliated WWW Sites: None at this time.

Revised Date: October 29, 2013